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RUNNING HEAD: "THEY" ARE OLD BUT "I" FEEL YOUNGER

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Age-group dissociation as a self-protective strategy in old age

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Abstract

Age becomes an important self-defining aspect particularly during advanced age. With increasing age, negative attributes related to age and aging become salient. Aging related declines, losses, as well as the finitude of life seem to threaten older adults' sense of self. We hypothesize that older adults will try to avoid the negative consequences of their age group membership by distancing themselves from their age group. Study 1 (N = 544, 65% female; 18-85 yrs) examined the role of age group identification for self-conception and self-image (subjective age and future time perspective) across the life span. Results show that weakly identified older adults feel younger than their chronological age and report a more expanded future time perspective relative to their same-age counterparts. A second experiment (N = 68, 69% female; 65-85 yrs) tested the impact of age stereotypes on older adults' level of age group identification. Results suggest that older adults are more likely to psychologically dissociate themselves from their age group when negative age stereotypes are salient. Discussion focuses on (mal)adaptive consequences of age-group dissociation in later adulthood.

Key words: Subjective age bias, age-group dissociation, age identity, age stereotypes

Word count: 6037

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As individuals grow older, they are confronted with negative age stereotypes (e.g., Crockett & Hummert, 1987; Hummert, 1999; Kite, Stockdale, Whitley, & Johnson, 2005; Levy & Banaji, 2002). For example, older adults are often perceived as being senile, incompetent, and unattractive. Consequently, older adults may feel that they are socially devalued. This perceived negative and stigmatized social identity might be psychologically threatening. Research suggests that a stigmatized identity may have negative effects for individuals' self-concept and well-being (Crocker, Major, & Steele, 1998; Zebrowitz & Montepare, 2000). How are older adults able to protect themselves from these negative images of aging? The present research addresses age-group dissociation, which may be considered as a self-protective strategy that can be used in advanced age, in order to prevent negative age stereotypes from becoming self-defining. In the present research, we investigate the conditions under which older adults disidentify with their age group and the resulting consequences of such age-group dissociation.

Self-protective strategies in coping with a negative age identity

In order to protect themselves from negative stereotypes, individuals employ various strategies (Allport, 1954; Tajfel, 1978). In the context of aging, older adults may "deny" or "hide" their age. For example, older adults often exclude themselves from the old age category and endorse negative stereotypes about their own age group (Heckhausen & Brim, 1997; Heckhausen & Krüger, 1993; Hummert, Garstka, O'Brien, Greenwald, & Mellot, 2002; Nosek, Banaji, & Greenwald, 2002). These observations point to a possible paradox of aging, that is, older adults do not identify with their age peers and, as a consequence, do not consider themselves as being as old as "the other old people". From an individual perspective, subjective age reflects a self-related adaptation in the experience of aging. As people grow older, they typically feel and desire to be younger than their chronological age (Montepare &

Zebrowitz, 1989; Smith & Baltes, 1999). "The older we get, the younger we feel" is a phenomenon often referred to as *subjective age bias* that tends to increase in later adulthood. Another facet of growing old, and an important psychological concept, is the perception of *future time* left in life. Old age is typically associated with the awareness of finitude, that is, the experience of a limited future time perspective (Carstensen, 2006; Lang & Carstensen, 2002). As people grow older, they perceive their future time left as more limited because they are approaching the end of their lifetime (Lang, 2000). Perceiving life as limited might be a threatening experience that older adults want to avoid.

Based on the assumption that identifying with a certain social identity shapes individuals' self-conceptions, the present research examined (a) when older adults (dis)identify with their age group and (b) how age group identification shapes subjective age and future time perspective.

Age-group dissociation in the context of old age

Identifying with people of the same age represents a decisive variable in self-definition (Chasteen, 2005; Weiss & Lang, 2009). Research has shown that individuals may accept or avoid certain social identities depending on their negative or positive cognitive representation of such identities (Ashmore, Deaux, & McLaughlin-Volpe, 2004; Arndt, Greenberg, Schimel, Pyszczinski, & Solomon, 2002; Ellemers, Spears, & Doosje, 1997; Mussweiler, Gabriel, & Bodenhausen, 2000; Tajfel, 1969). Thus, individuals are motivated to identify with groups that provide a sense of positive social identity (Abrams & Hogg, 1988). In response to a negative or stigmatized social identity, individuals may distance themselves from that particular group. Indeed, older adults often perceive same-aged peers as "being old" while perceiving themselves as being younger. Accordingly, we define *age-group dissociation* as the tendency to put psychological distance between oneself and similarly-aged people.

As previously stated, older adults often deny that they are old. For example, older adults may use cosmetic surgery, hair dyeing, or "anti-aging" cosmetics, in order to hide their

age (Harwood, Giles, & Ryan, 1995). Allport (1954) argued that if group membership is threatening, then people might deny their membership to the group: "Perhaps the simplest response a victim can make is to deny his membership in a disparaged group*."* (p. 145). For example, the adoption of a younger subjective age by older adults may reflect a age-group dissociation from same-aged people. In this context, the subjective age bias may be explained as a defensive response that aims to protect older adults' self-image from the perceived negative consequences of advanced chronological age (Blau, 1956; Heckhausen & Krueger, 1993). Previous research suggests that older adults' feeling of being younger than their chronological age is associated with better psychological well being, as well as higher levels of self-esteem (e.g., Bultena & Powers, 1978; Ward, 1977; Westerhof & Barrett, 2005). Furthermore, adopting a younger age identity has been described as a defensive response, for example, "pretending that there is no end of life" (Rappaport, Fossler, Bross, & Gilden, 1993; p. 370). Thus, when older adults dissociate themselves from their age group they may be trying to avoid inevitable aging-associated changes, such as, the experience of finitude.

The present research

In the present research, we focus on the conditions and the consequences of older adults' defining or differentiating themselves through their age group membership. The aim of the present studies was twofold: First, we examined whether subjective age bias and sense of time is affected by age group identification. Based on the assumption that there exists a link between the extent to which a person identifies with a certain group and whether he or she adopts the group's identity (e.g., Biernat, Vescio, & Green, 1996; Pickett, Bonner, & Coleman, 2002; Turner, 1984; Tropp & Wright, 2001), we hypothesized that older adults, who strongly identify with their age group, shall perceive themselves more often in light of age stereotypes. Specifically, higher levels of age group identification involve the assimilating of oneself to stereotypical representations of the in-group (i.e., self-stereotyping, Spears, Doosje, & Ellemers, 1997). In contrast, lower levels of age group identification should be

linked to a differentiation (contrast) of oneself from a stereotypical representation of the in-group (see Schwarz & Bless, 2007). Second, we investigated whether the activation of positive, negative, or neutral age-related information affects age group identification and subjectively perceived age in older adults. In order to protect themselves from negative age stereotypes, we argue that older adults may be more likely to dissociate themselves from their age group, especially when negative age stereotypes are salient.

Study 1

The aim of Study 1 was to investigate whether age group identification shapes self-concept and self-image across the lifespan. For this purpose, Study 1 employed a correlational design. Notably, in Study 1, identification was treated as an individual difference variable. The following hypotheses regarding the moderating role of social identification were tested: First, older adults who dissociate themselves from their age group, that is, who display lower levels of age group identification feel younger than their chronological age. Second, older adults who strongly identify with their age group perceive their future time as more limited. No such differences were expected for younger and middle-aged adults.

Method

Procedure and participants

Recruitment procedures for Study 1 included media coverage in the Internet, as well as the local press. German speaking participants completed a web-based questionnaire. Before being admitted to the study, participants were informed about anonymity and confidentiality issues regarding their data. Next, they completed measures concerning self-concept and aging. These measures assessed general attitudes towards aging, age group identification, subjective age bias, and future time perspective. Finally, participants reported information pertaining to their health status and demographic background. As an incentive, participants received personalized feedback at the end of the questionnaire. The feedback contained details concerning subjective age identity and desired life time duration. In order to preclude repeated

or fake responding, all individuals generated a personal code number and responded to a set of questions validating their identity. Thus, it was possible to validate the given information. Altogether, we relied on verified data that was collected from 544 adults.

The research participants ranged in age from 18 to 85-years-old (M = 44.9, SD = 16.2); 65% were female. One percent of participants indicated that they had no educational degree, 6% had primary education, 18% had lower secondary education, 30% had completed high school, and 46% held a university degree. Concerning current work status, 19% of the participants were students or in apprenticeship, 39% were full-time employed, 3% were unemployed, 14% were retired, 6% were civil servants, 11% were self-employed, and 4% were homemakers. Forty-five percent of the participants were married and living together with their spouse, 39% were unmarried, 12% were divorced, and 4% were widowed. A total of 53% had at least one child.

Three age-cohort groups were distinguished. The younger adult sample included n = 201 individuals, ranging from 18 to 39-years-old (M = 27.3, SD = 5.99); 69% were female. The middle-aged adult sample consisted of n = 280 middle-aged adults, ranging from 40 to 64-years-old (M = 51.5, SD = 6.99); 64% were female. The older adult sample consisted of n = 63 older adults, ranging from 65 to 85-years-old (M = 71.7, SD = 5.41); 57% were female.

Measures

Age group identification. In order to assess the affiliation with one's age group, participants rated the items "I identify with people of my age" and "I have a lot in common with people of my age". Responses were assessed on a 7-point scale that was anchored on the ends with 1 (do not agree) and 7 (absolutely agree). The scale was transformed into T scores. Higher scores (above 50) represent stronger age group identification. The correlation of the two items was .72, $p < .001$.

Subjective age bias. Participants were asked to indicate how old they feel. The subjective-age score was obtained by computing the discrepancy expressed in years between

chronological age and felt age. The subjective age bias specifies the tendency to feel either younger or older than one's chronological age. Higher, positive values indicate the tendency to feel younger.

Future time perspective. Future time perspective (FTP) was assessed with the four item, shortened version of the FTP scale (Lang & Carstensen, 2002). Participants rated the degree to which they agreed with each of the 4 items on a scale from 1 (*do not a*gree) to 5 (*absolutely agree*) (e.g., "There are only limited possibilities in my future" (reverse scored), "Most of my life (still) lies ahead of me," "My future seems infinite to me," and "I think I will set many new goals in the future"). Cronbach's alpha for the scale was .70. The scale was transformed into *T* scores. Lower scores (below 50) represent a perception that future time is more limited.

Subjective health. Participants responded to two items assessing their physical and mental health on a 7-point rating scale; higher values indicate better health (e.g., ''How healthy do you feel, physically and mentally?'' and "When you think about the average 70 to 80-year-old, how healthy do you feel physically and mentally in comparison to this group?"). Cronbach's alpha of the two items was .61.

Results

In order to investigate relationships between the independent variable (i.e., age group identification) and the dependent variables (future time perspective and subjective age bias), bivariate relationships were computed. Table 1 summarizes bivariate correlations among age group identification, subjective age bias, subjective health, future time perspective, and demographic characteristics. Results revealed that those who were less identified with their age group perceived themselves as younger than those who were more identified. Moreover, age group identification was positively associated with level of education, as well as subjective health. Chronological age was negatively related to future time perspective and

subjective health. However, it was positively related to subjective age bias. Additionally, FTP was positively related to feeling younger and healthier.

Age group identification and sense of time

In order to predict the individual level variables (i.e., subjective age bias and future time perspective) by age group identification, a set of multiple regression analyses was conducted. Prior to analyses, the measures were standardized. Analyses were conducted to test the (interaction) effect of chronological age and identification on the dependent variables. Subsequently, interaction effects were tested after statistically controlling for covariates including sex, subjective health, and level of education (see Table 2).

Age differential effects of age group identification on subjective age bias

We examined the association between age group identification and self-perception in terms of subjective age as a function of chronological age. First, mean levels of subjective age bias between the three age cohorts were compared. Younger adults felt on average 1.41 (*SD* = 4.38) years younger than their chronological age. Middle-aged adults felt on average 6.19 (*SD* = 6.53) years younger than their chronological age. Finally, older adults felt on average 9.11 (*SD* = 7.18) years younger than their chronological age. Mean differences of subjective age bias were significantly different between the three age cohorts, $F(2, 543) = 57.4$, $p < .001$, $\eta^2 = .18$.

Second, multiple regression analyses were conducted. Results revealed that subjective age bias had a significant positive relation with chronological age ($B = .18$, $p < .01$) and a significant negative relation with age group identification *(*$B = -.63$, $p < .001$). In Step 2 of our analysis, we found a significant interaction effect of chronological age and age group identification on subjective age bias ($R^2_{adj.} = .24$, $B = -.06$; $\Delta R^2 = .02$, $p < .01$). Moreover, the interaction effect of chronological age and age group identification remained a significant predictor of subjective age bias, even after statistically controlling for covariates (Step 3, $R^2_{adj.}$

= .30, B = -.05; ΔR^2 = .06, p < .01). Importantly, the interaction effect was significant above and beyond the influence of sex, subjective health, and level of education.

Since chronological age significantly moderated the effect of identification on subjective age bias, simple slopes (Aiken & West, 1991) for younger adults (18 to 39-years-old), middle-aged (40 to 64-years-old), and older adults (65 to 85-years-old) were plotted. Among younger adults, age group identification did not predict subjective age (p > .05). In contrast, middle-aged adults' reports of feeling younger were associated with lower levels of age group identification (β = -.15, t(279) = -2.45, p < .05, $R^2_{adj.}$ = .02). Among older adults, a strong subjective age bias was associated with lower levels of age group identification (β = -.41, t(62) = -3.56, p < .01, $R^2_{adj.}$ = .16). These data support our hypothesis: subjective age bias depends on the extent to which adults - in particular older adults - identify with their age group. Age group identification accounted for 16% of the variance of subjectively perceived age in older adults, demonstrating a strong link between collective age identity and individually perceived age. Figure 1 illustrates the nature of this age differential effect (i.e., for younger, middle-aged, and older adults) as evidenced in the relationship between age group identification and subjective age bias.

Age differential effects of age group identification on FTP

In order to investigate whether individual's chronological age and identification with their age group predicted a sense of open-ended remaining future time, the (interaction) effects of chronological age and identification on FTP were investigated. Results revealed that FTP had a significant negative relation to age (B = -.37, p < .001). By contrast, no significant effect was found for age group identification. Next, our results showed a significant interaction of chronological age and identification on FTP ($R^2_{adj.}$ = .36, B = -.01; ΔR^2 = .01, p < .01). Moreover, the interaction effect of chronological age and identification remained a significant predictor of individual FTP, even after statistically controlling for covariates (Step 3, $R^2_{adj.}$ = .42, B = -.004; ΔR^2 = .06, p < .05). Again, the interaction effect was significant

above and beyond the influence of sex, subjective health, and level of education. In sum, this interaction effect indicates that higher levels of age group identification in advanced age lead to the perception that time is more limited.

In our further exploration, simple slope effect analyses (Aiken & West, 1991) for younger adults (18 to 39-years-old), middle-aged (40 to 64-years-old) and older adults (65 to 85-years-old) were conducted. Among younger adults, increased age group identification was associated with a more open-ended future time perspective ($\beta = .20$, $t(200) = 2.88$, $p < .01$, $R^2_{adj.} = .04$). As regards older adults, however, perceived future time decreased with higher levels of age group identification ($\beta = -.30$, $t(62) = -2.46$, $p < .05$, $R^2_{adj.} = .08$). Notably, no effect was found for middle aged-adults ($\beta = -.04$, $t(279) = -.73$, *ns*). The association between identification and FTP for younger and older adults was found to be in the opposite direction. This indicates that higher levels of age group identification were associated with higher ratings of FTP in younger adults and lower ratings in older adults (see Figure 2). To summarize, age group orientation was associated with younger and older adults', but not with middle-aged adults' sense of time left in life.

Discussion

Findings of this first study are consistent with the assumption that identification with same-aged people entails different consequences for younger, middle-aged, and older adults.

First, as expected, lower levels of age group identification were associated with a sense of feeling younger than one's actual chronological age. In other words, the tendency to see oneself as younger than one's chronological age reflects a dissociation between oneself and same-aged people. This association increases with advancing chronological age. Age group identification was not significantly related to younger adults' subjective age. However, there was a significant positive effect for middle-aged adults, and this effect increased among older adults. Therefore, in later adulthood age group identity is highly associated with individuals' subjective age. Second, age group identification was positively related to

perceived future time left in life among younger and older adults. Younger adults who strongly identified with their age group perceived a more open-ended future time perspective. In contrast, older adults exhibited the opposite pattern: Older adults who psychologically dissociated themselves from their age group perceived their future as more open-ended. Nevertheless, no such effect was found for middle-aged adults. Subsequently, the present study reveals that individuals' sense of time is shaped, to some degree, by age group identification. These associations were significant when the influence of socio–demographic variables and subjective health were statistically controlled, suggesting a central role of age group identification.

It is important to note, however, that one major limitation of the first study concerns the interpretation of correlational findings. Although the results are consistent with theoretical assumptions, given the design and analyses of the present study, it is not possible to determine the direction of any causal relationship between age group identification and variables on the individual level. One alternative interpretation of the results is that older adults who perceive their future time as limited strongly identify with their age group. Based on the present results this interpretation cannot be ruled out. An experimental study design permits a better understanding of the directionality of such processes. Hence, in Study 2 we examined social-contextual factors that may potentially increase age-group dissociation in later adulthood.

Study 2

Indeed, Study 2 incorporates an experimental design, in order to extend findings from Study 1. This experiment was designed to provide evidence for the link between social-contextual factors (i.e., age stereotypes), age group identification, and subjective age bias. The basic assumption was that feeling younger and dissociating oneself from one's age group is a self-protective response that is displayed by older adults. Thus, when age group membership becomes self-threatening (i.e., activating negative age-related information), older adults should psychologically distance themselves from their age group. By doing so, older adults

may protect their self-image from the adverse effects of negative age stereotypes. In addition, it is expected that identification mediates the association between the activation of age stereotypes and individual perceived age. More precisely, we tested the following two hypotheses: (1) Older adults psychologically dissociate themselves from people of the same age more strongly in a context where negative age stereotypes are salient, as opposed to a context where positive or neutral age stereotypes are salient. (2) The exposure of older adults to negative age stereotypes leads to a higher subjective age bias, and this relationship will be mediated by age group identification.

Method

Participants

A total of 73 older adults (65 to 88-years-old) participated in the web-based study. Outlier analyses[1] revealed five outliers on the dependent variables that were excluded from the analyses (Tabachnick & Fidell, 2007). Finally, the sample consisted of 68 older adults (65 to 88-years-old; $M = 71.0$, $SD = 5.04$; 69% female). Participants were recruited through a senior-community web-site. A web-link that included brief information about the study was placed in the news section of the site. As an incentive, participants received feedback concerning their correct answers on the quiz.

Procedure

The study was introduced as the "Aging-Quiz" – a short online-quiz that involves questions of becoming older and the aging process. The experiment included six questions that manipulated the salience of age stereotypes and assessed age group identification, as well as subjective age bias. A manipulation check confirmed the intended manipulation. Finally, demographic variables, such as, chronological age and sex were recorded.

Independent variables

Treatment manipulation. By clicking on the web-link, participants were randomly assigned to one of three conditions of a 3 (stereotype salience: neutral, positive, and negative)

between-subject design. First, participants were informed that the experiment consisted of two parts. They then read a short introduction containing information about the confidentiality and anonymity of their data. The first part consisted of an aging quiz. In all conditions participants were requested to answer six questions on the "Aging Quiz" (see Appendix). Next, participants learned that the second part of the experiment involved a few more general questions concerning age and aging. After responding to two filler questions, participants answered questions concerning the intended manipulation, age group identification, and subjective age. Finally, participants were debriefed and thanked for their participation. In order to manipulate a positive aging perception, we requested participants to answer six questions, which focused on profits and gains associated with age and aging (e.g., wisdom). To manipulate a negative aging perception, six questions were introduced that focused on costs and losses associated with age and aging (e.g., dementia). Additionally, six questions that contained information related to neutral aspects of age and aging were presented to participants in the control condition.

Dependent variables

Age group identification. In order to assess the affiliation with one's age group, participants rated the items "*I identify with people my age*" and "*I am glad to belong to people my age*". Responses were assessed on a 7-point scale ranging from 1 (*do not agree*) to 7 (*absolutely agree*). The correlation of these two items was .60, $p < .001$.

Subjective age bias. Participants' subjective age bias was measured by using the same discrepancy (i.e., chronological age vs. felt age) score that was used in Study 1.

Results

To examine whether the age stereotype manipulation was successful, we asked participants to indicate the extent to which they were concerned about their age and getting older after they answered the quiz questions ("*How do you feel when you think about your age and getting older?*"; 1 = "*concerned"* to 7 = *"confident"*). A one-way ANOVA that was

performed on the manipulation check ($F(2, 67) = 2.84$, $p = .07$, $\eta_p^2 = .08$) revealed significant differences between the conditions. Although there was no differential effect of the presentation of neutral and positive stereotypes, planned comparisons revealed that older adults in the negative stereotype salience condition were more concerned about aging and getting older ($M = 3.48$, $SD = 1.86$), in comparison to older adults in the neutral ($M = 4.54$, $SD = 1.90$) and positive stereotype salience condition ($M = 4.71$, $SD = 1.74$), $t(65) = 2.38$, $p < .05$, $d = .62$.

Bivariate correlations showed that age group identification was negatively associated with subjective age bias ($r = -.37$, $p < .01$). We computed a multivariate analysis of variance (MANOVA), in order to test whether the activation of positive, negative, or neutral aging-related information would have an effect on age group identification and subjective age. The means and standard deviations of the dependent variables are presented in Table 3. The multivariate result (Pillai's trace) was significant for stereotype salience condition, $F(4, 130) = 2.82$, $p < .05$, $\eta_p^2 = .08$. Separate ANOVAS for the dependent variables revealed a significant effect of condition for age group identification ($F(2, 67) = 5.39$, $p < .01$, $\eta_p^2 = .14$), but only marginal effects for subjective age bias ($F(2, 67) = 2.29$, $p = .11$, $\eta_p^2 = .07$). Nevertheless, contrast results revealed significant differences between the positive and neutral conditions, as compared to the negative condition, $ps < .04$. Therefore, analyses were conducted, in order to test differences between the (a) neutral/positive conditions and the (b) negative stereotype salience condition. Moreover, older adults in the negative stereotype salience condition displayed a higher subjective age bias ($M = 9.38$, $SD = 5.87$) relative to older adults in the neutral ($M = 6.92$, $SD = 4.44$) and positive ($M = 6.38$, $SD = 4.30$) stereotype salience condition, $t(66) = 2.12$, $p < .05$, $d = .52$. The mean differences of subjective age bias between the three experimental conditions are depicted in Figure 3.

Furthermore, older adults in the negative stereotype salience condition exhibited lower levels of age group identification ($M = 2.81$, $SD = 1.42$) relative to older adults in the neutral

(M = 4.02, SD = 1.40) and positive (M = 4.14, SD = 1.61) stereotype salience condition, $t(66) = 3.29$, $p < .01$, $d = .88$. Older adults' mean ratings of age group identification differed significantly from the center of the scale (4), $t(20) = 3.85$, $p < .01$. This confirms that older adults psychologically dissociate themselves from their age group when old age is associated with negative age stereotypes (Figure 4).

Testing the mediating role of identification: Subjective age bias

In our further analysis, we examined the mediating role of identification in the relationship of stereotype salience and subjective age bias. First, identification was regressed on stereotype salience (coded as -1 = positive/neutral and 1 = negative), and we found a significant negative effect of stereotype salience on identification ($\beta = -.38$, $p < .01$). Then we performed a regression analysis with subjective age bias as dependent and stereotype salience as independent variable and our results yielded a significant positive effect of condition ($\beta = .25$, $p < .05$). However, identification negatively predicted subjective age bias ($\beta = -.37$, $p < .01$). To further examine the mediating role of age group identification, a multiple regression analysis was conducted, that is, subjective age bias was regressed simultaneously on identification and stereotype salience (Baron & Kenny, 1986; McKinnon, Fairchild, & Fritz, 2007). In support of its mediating role, only identification had a significant effect ($\beta = -.30$ $p < .05$). However, stereotype salience retained no predictive value ($\beta = .14$, *ns*). The indirect effect of stereotype salience, via identification, on subjective age bias was also significant ($z = 2.26$, $p < .01$; Sobel, 1982). Bootstrapping analysis (Preacher & Hayes, 2008) also confirmed that the indirect effect of condition via age group identification was significant (95% confidence interval = .345 /2.83). In sum, our analyses confirm the notion that exposure to negative age stereotypes is positively related to feeling younger than one's chronological age, and that this relationship is mediated by age group identification.

Discussion

The findings of Study 2 support the hypothesis that older adults respond to negative age stereotypes that are salient in a given context. First, older adults were more concerned about their actual age and growing older in a situation, in which negative (relative to neutral and positive) age-related information were presented. Second, in response to negative age stereotypes, older adults distanced themselves from their age group, as well as their actual chronological age. More precisely, older adults who were exposed to negative age stereotypes displayed lower levels of age group identification and a stronger subjective age bias, as opposed to older adults who were exposed to neutral and positive age stereotypes. Thus, the present findings demonstrate that exposure to negative age stereotypes leads to age group dissociation in older adults. Nevertheless, the effect of negative age stereotypes on feeling younger than one's chronological age is mediated by age group identification. This supports the idea that age constitutes an important social category in later adulthood. Furthermore, age group identification is the process that links older adults' category membership to their self-perception.

A possible limitation of the study pertains to the subjective age scores of five participants that deviated more than 3 *SD* from the mean and were therefore classified as outliers. Specifically, these participants felt more older (> 25 years) than their chronological age. However, it is a robust finding that as people grow older they feel younger than their chronological age. Therefore, we can only speculate that these participants had a different understanding of the question ("How old do you feel?"); they may have indicated what age they want to reach.

One of our findings that requires further consideration is that the control condition did not differ from the positive condition, as regards the manipulation check and dependent variables. Thus, to this point it is not clear whether our positive aging stereotype manipulation did or did not activate positive age stereotypes or framed old age as a positive social identity. Moreover, in the present experiment it was not possible to improve older adults' age group

identification in a context where positive (relative to neutral) age stereotypes were salient. Nevertheless, negative age stereotypes reduced older adults' identification with their age group. Future research needs to investigate effective ways to induce positive age stereotypes in older adults and consequences for older adults' self-concept well-being. Research may also examine whether age-group dissociation represents a self-protective response to negative and threatening age stereotypes in later adulthood by demonstrating that it positively affects psychological functioning and well-being.

General Discussion

The present research suggests that different levels of age group identification influence individuals' subjective age and sense of time. In two studies, findings were consistent with the idea that older adults are motivated to avoid aging associated loss by psychologically dissociating themselves from old age. More specifically, older adults were able to prevent an age prototypical self-image by disidentifying with their age group. Study 1 illustrates that low levels of age group identification (i.e., dissociation) are positively related to subjective age bias and future time perspective. In addition, Study 2 demonstrates that older adults disidentified with their age group when negative age stereotypes are salient. The present research highlights the fundamental role of age group identification in the context of aging. If old age is associated with loss and decline, then older adults respond by distancing themselves from their age group. In contrast, if old age is linked to neutral and positive stereotypes, then older adults do not distance themselves from their age group. Our results support our hypothesis that age group identification is significantly related to older adults' sense of time. Identifying with one's age group in advanced age leads to a limited future time perspective. Age-group dissociation from one's age group leads to a more open-ended future time perspective. In general, these findings suggest that categorizing oneself as a member of one's age group influences how individuals think about themselves and their future.

Indeed, the present research confirms the moderating role of age group identification in the context of subjective age and sense of time. For example, it was shown that subjective age bias reflects a dissociation of oneself from same aged people, and that this dissociation increases with advancing age. However, feeling younger than one's actual age has been explained as the expression of a positive self-image presupposing a negative image of old age (e.g., Filipp & Ferring, 1989; Kleinspehn-Ammerlahn , Kotter-Gruhn , & Smith , 2008). It appears that feeling younger is not a reflection of positive aging experience, but rather points to the tendency to distance oneself from one's age group as one grows older. Thus, the subjective age bias may operate as a self-protective strategy because it provides older adults with the ability to distance themselves from old age.

Former research has mainly focused on the effects of activating negative and positive age stereotypes on older adults' performance (e.g., Hess, Auman, Colcombe, & Rahal, 2003; Levy, 1996). For example, when negative age stereotypes were activated older adults displayed a lower cognitive performance relative to older adults primed with positive age stereotypes. Thus, future research could test whether age group dissociation moderates the effect of negative and positive age stereotypes on older adults' performance.

One implication of our analyses is that age-group dissociation offers an effective means of coping with a negative social identity: it may prevent older individuals from focusing on the negative aspects of aging. Nevertheless, Garstka and colleagues (Garstka, Schmitt, Branscombe, & Hummert, 2004) report evidence that if older adults' experience age discrimination, then identifying with one's age group can have positive consequences for older adults' well-being. Denying one's group membership may involve the rejection of an important part of oneself. Indeed, this might be psychologically harmful. Previous research has demonstrated the adaptive role of multiple age-cohort identities in advanced age (Weiss & Lang, 2009; Weiss & Lang 2010). Thus, in order to cope with a negative age identity, older adults shift their self-definition toward an alternative and more meaningful identity (i.e.,

generation). This suggests that distancing oneself from one's age group may only be adaptive if alternative social identities (i.e., generation) are available.

Thus, future research should investigate the conditions in which age-group dissociation offers an effective mean of coping with negative age stereotypes, as well as the long-term consequences for older adults' well-being. It is also important to focus on possible maladaptive consequences of age-group dissociation for older adults, for example, older adults' dissociation from the various important developmental tasks that should take place in old age. The effects of age-group dissociation may be less beneficial if it leads to neglecting important tasks, such as, preparation of advanced directives or searching for integrity. Altogether, it appears that age-group dissociation is a double-edged sword and may have opposing effects on older adults' adjustment to aging.

A limitation of the present research relates to the assessment of age group identification and subjective age bias when using two-item and single-item measures. This could have increased measurement errors. Furthermore, the present studies were implemented online. It has been shown that web-based studies are actually quite comparable with traditional paper-pencil studies and that they reliably replicate laboratory findings (Birnbaum, 2004; Gosling, Vazire, Srivastava, & John, 2004; Nosek et al., 2002). Since older adults can access online-studies more easily than laboratory studies, they are confronted with fewer constraints as regards the decision to participate. For example, getting to the laboratory may pose a problem for older adults who frequently suffer from cutbacks in their mobility. There are, however, also certain drawbacks involved in the use of online-methods. Participants in our study were able to access the studies at any time, and as a result, conditions could not be held constant as those conducted in laboratory settings. With this study design, it is impossible to control levels of distraction in the environment. Therefore, laboratory research is needed to replicate the findings of the present research.

Conclusion

In sum, the present research highlights the fundamental role of age group identification in the context of aging. Two studies showed that age group identification is significantly linked to older adults’ self-concept. Age-group dissociation represents an attempt to avoid a negative social age identity, and it may protect older individuals from negative age stereotypes.

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Footnote

[1]The subjective age score of the participants that were excluded from the analyses differed more than three standard deviations from the mean. A closer inspection of the outliers revealed that these participants reported feeling much older than their chronological age (> 25 years older). However, these outliers appeared independent from the experimental condition and the other effects (i.e., manipulation check and age group identification) remained stable when these cases were included.

Table 1

Means, Standard Deviations and Correlations of Variables in Study 1

Variable	*M*	*SD*	1	2	3	4	5	6
1. Age (in years)	44.9	16.2						
2. Sex	1.65	.50	-.06					
3. Subjective Health	6.02	.92	-.16***	.02				
4. Education	16.7	3.74	-.02	-.01	.01			
5. Subjective Age Bias	4.75	6.54	.45***	.02	.18***	-.09*		
6. Age Group Identification	4.13	1.66	-.05	-.01	.12**	.16***	-.12**	
7. Future Time Perspective	3.48	1.66	-.59***	.03	.33***	.08	-.06	.04

Note. $N = 544$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2

Multiple Regression Analyses Predicting Subjective Age Bias and Future Time Perspective in Study 1

	Subjective Age Bias			Future Time Perspective		
Model	*B*	*SE B*	β	*B*	*SE B*	β
			Model 1: Main Effects			
Age (in years)	.18	.02	.45***	-.37	.02	-.59***
Identification	-.63	.25	-.10**	.01	.04	-.01
Adjusted R^2			.21			.35
			Model 2: Main Effects and Interaction Effects			
Age (in years)	.19	.02	.46***	-.04	.002	-.07
Identification	2.17	.79	.33**	.30	.10	.30**
Age*Identification	-.06	.02	-.45***	-.01	.002	-.59**
Adjusted R^2			.24			.36
			Model 3: Main Effects, Covariates, and Interaction Effects			
Age (in years)	.20	.02	-.50***	-.03	.002	-.55***
Identification	1.36	.72	.21	.20	.10	.20
Sex	.44	.49	-.03	-.04	.07	-.02
Subjective Health	1.69	.25	.26***	.25	.03	.24***
Education	.59	.26	-.09*	-.11	.04	.11**
Age*Identification	-.05	.02	-.34**	-.004	.002	-.21*
Adjusted R^2			.30			.42

Note. $N = 544$; *$p < .05$, **$p < .01$ ***, $p < .001$.

Table 3

Means and Standard Deviations of Variables in Study 2

	Stereotype Salience					
	Positive		Neutral		Negative	
Variable	M	SD	M	SD	M	SD
Age (in years)	73.3	5.66	70.2	5.15	69.6	3.36
Age Group Identification	4.14	1.61	4.02	1.40	2.81	1.42
Subjective Age Bias	6.38	4.30	6.92	4.44	9.38	5.87
n	21		26		21	

Note. $N = 68$

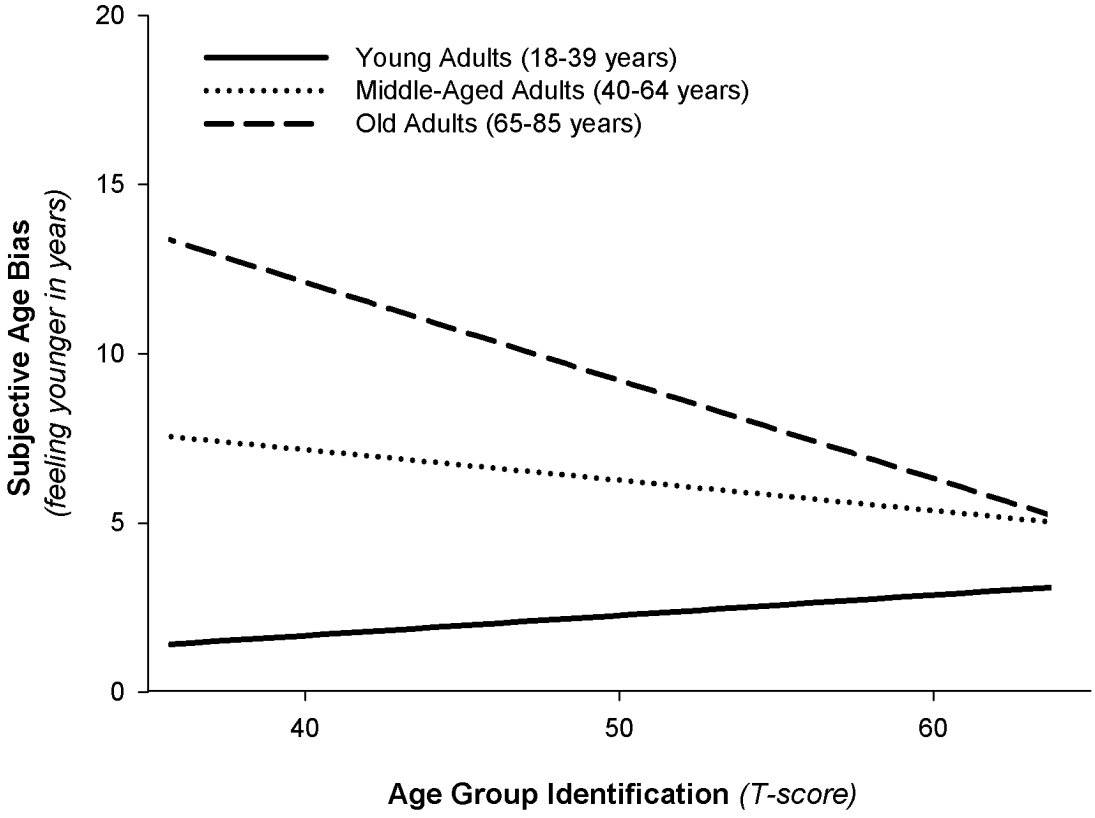
Figure Captions

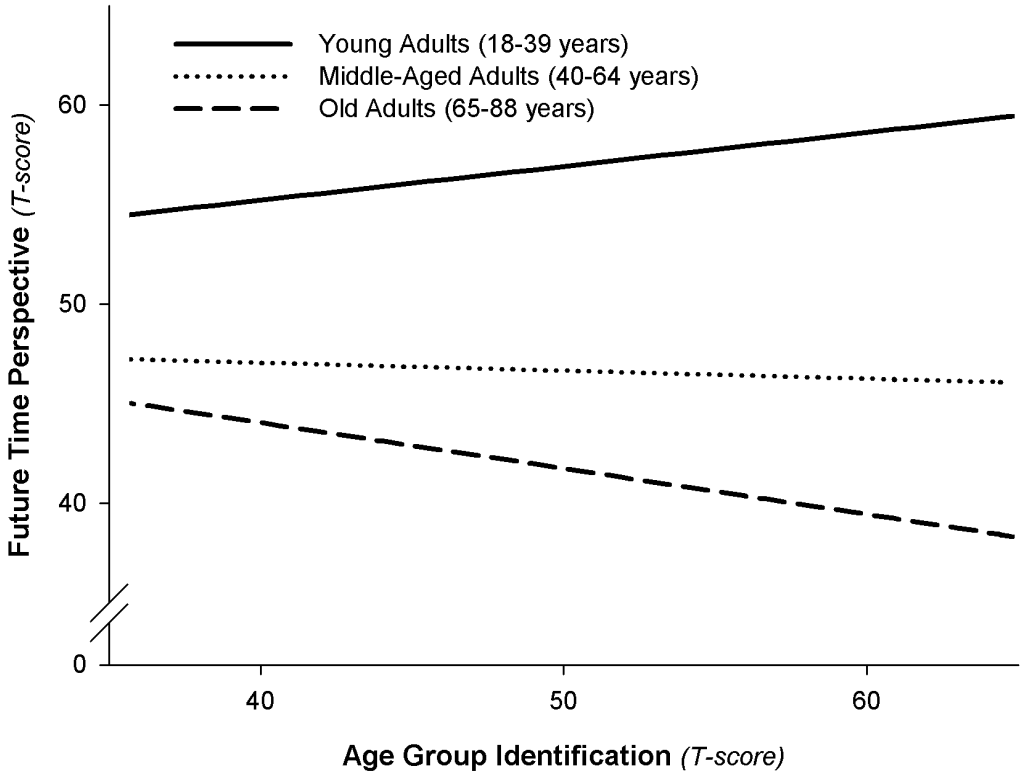
Figure 1. Subjective age bias as a function of age group identification and age in Study 1.

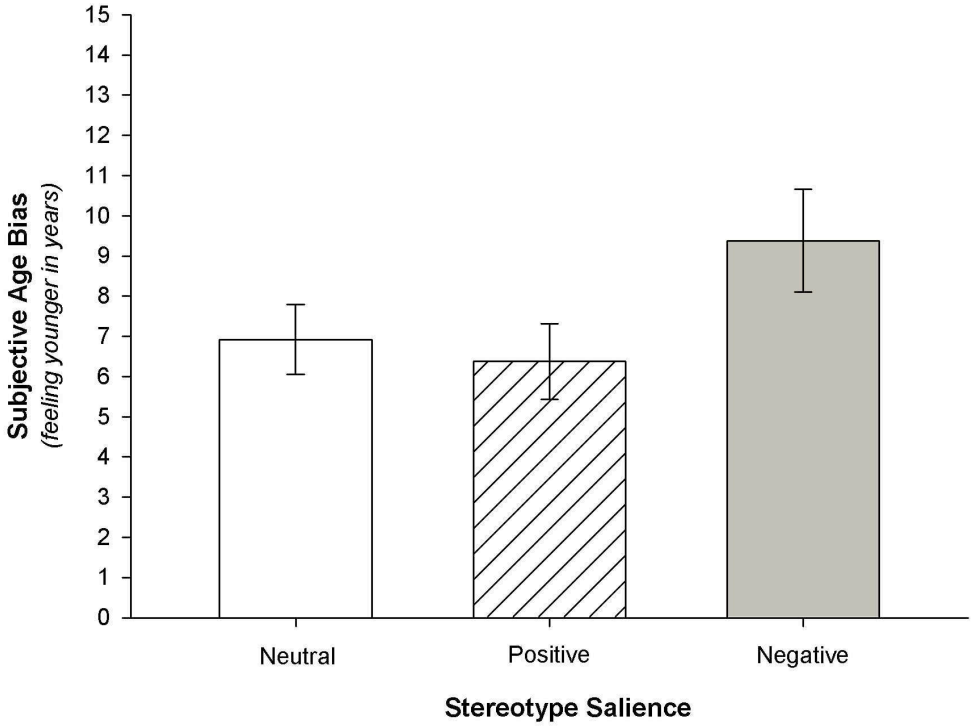
Figure 2. Future time perspective as a function of age group identification and age in Study 1.

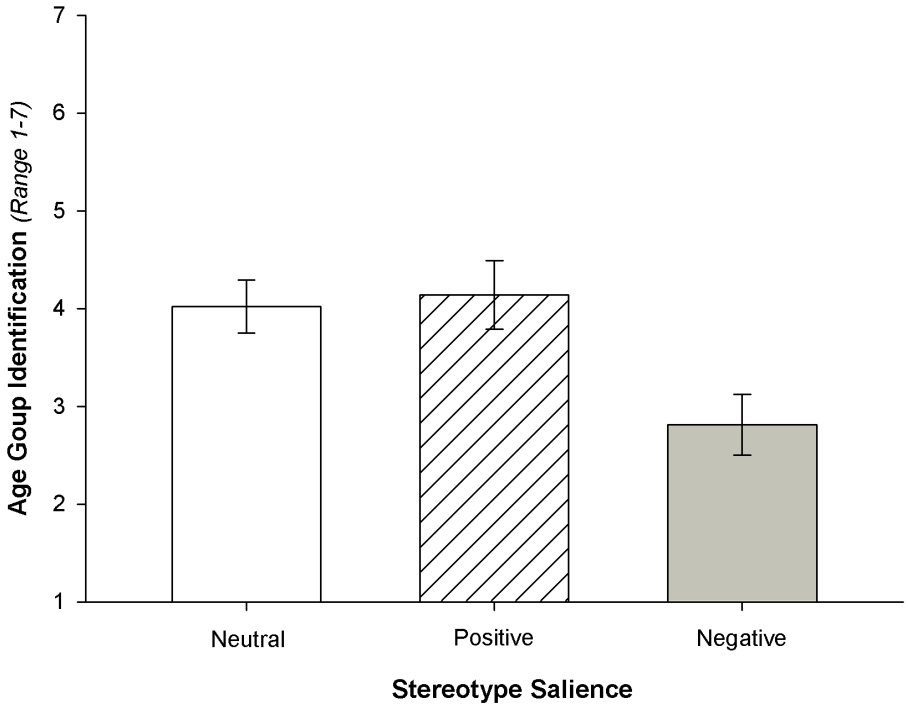
Figure 3. Means and standard errors of subjective age bias by stereotype salience conditions in Study 2.

Figure 4. Means and standard errors of age group identification by stereotype salience condition in Study 2.


20
15
10
5
0
Young Adults (18-39 years)
Middle-Aged Adults (40-64 years)
Old Adults (65-85 years)
Subjective Age Bias
(feeling younger in years)
40
50
60
Age Group Identification (T-score)


Young Adults (18-39 years)
Middle-Aged Adults (40-64 years)
Old Adults (65-88 years)
Future Time Perspective (T-score)
60
50
40
0
40
50
60
Age Group Identification (T-score)


Subjective Age Bias
(feeling younger in years)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
Neutral
Positive
Negative
Stereotype Salience


7
6
5
4
3
2
1
Age Goup Identification (Range 1-7)
Neutral
Positive
Negative
Stereotype Salience

Appendix

Manipulation Study 2

1. Positive Age Stereotypes

Competencies remain stable as people grow older. Even gains in competencies can be observed in some areas. What are these competencies?

(a) Wisdom and creativity*
(b) Spatial orientation and flexibility
(c) Determination and persistence

The increase of life expectancy is generally associated with better health. What is the average life expectancy of newborn girls in Germany?

(a) 76.6 years
(b) 80.2 years
(c) 82.1 years*

Many older adults feel vital and want to stay on the job. How many people older than 65 years are still actively working in Germany?

(a) 50 000
(b) 30 000
(c) 100 000*

In Europe, the proportion of the working population increased in the past years. Meanwhile, seniors represent a competitive factor in the economy. Which characteristics are most valued in older employees?

(a) Social skills*
(b) Conflict management*
(c) Experience with complex problems*

A wide array of cognitive skills can be improved with training in advanced age. What do you think: In which of the following areas do competencies remain stable and can even be improved?

(a) Expertise and know-how*
(b) Speed

With growing age emotions are experienced as more complex. What do you think: In which area is an increase of satisfaction observable?

(a) Partnership*
(b) Future expectations
(c) Sport

2. Negative Age Stereotypes

With advancing age deficiencies increase. What do you think: How many percent of people older than 80 years report to suffer from chronic health problems?

(a) 82 percent*
(b) 74 percent
(c) 68 percent

The loss of autonomy is an inevitable phenomenon of advanced age. How large is the proportion of people in need of care among people older than 85 years?

(a) 38 percent
(b) 46 percent*
(c) 42 percent

The frequency of dementia increases beyond the age of 60 years and doubles every five years. How many people older than 90 years are demented?

(a) One third*
(b) Half
(c) One fifth

Aging is not only associated with health related loss but also with economic loss. What do you think: How large is the risk of poverty among people older than 65 years?

(a) 4 percent
(b) 23 percent
(c) 11 percent*

Cognitive functioning becomes increasingly limited in old age. Which areas of functioning are affected?

(a) Self-control*
(b) Wisdom
(c) Creativity

The human perceptual system is affected by a vast deterioration in the second half of life. Which of the specified senses are affected?

(a) Smell*
(b) Taste*
(c) Grope*

3. Neutral Age Stereotypes

How old became the oldest human whose date of birth and death was verifiably documented?

(a) 102 years
(b) 144 years
(c) 122 years*

What does “Demography” mean?

(a) Science of numbers
(b) Latin demographa: “pyramid“
(c) Démos “people“ and graphé “description“*

The process of aging is starting at the beginning of our lives. At what age do children start to judge other people’s age correctly?

(a) At the age of 14
(b) At the age of four
(c) At the age of six*

The life span is linked with various memories. From which age period are information and events remembered best?

(a) 10 - 30 years*
(b) 40 - 50 years
(c) 5 - 10 years

What does the notion of “Senescence” mean?

(a) Greek senesze “river course”
(b) Latin senescere: “growing old“*
(c) Senezia: italian city

At what age, on average, do women in Germany marry the first time?

(a) 29.6 years*
(b) 22.4 years
(c) 34.3 years

Note. Asterisks mark correct answers.